

CONSOLIDATED INFORMATION TECHNOLOGY SERVICES TASK ASSIGNMENT (TA)

1. **TITLE:** (D211) AEEB COMPUTER SYSTEM ADMINISTRATION

TA No:	RFC001-Rev10	
Task Area Monitor:	Alternate Task Area Monitor:	
NASA POC:	Software Control Class:	Low Control
Type of Task:	Recurring Task	

2. **BACKGROUND**

The AEEB computer resources consist of a heterogeneous network of UNIX workstations, advanced visualization systems, Sun file servers, and PC/MAC computers in Buildings 1268, B1268A, and B1209. The operating systems to be supported among the computers listed in Exhibit A for this task include: IRIX, CentOS, Suse Linux, Solaris, Windows XP, and Mac OSX. Application software to be supported includes various commercial and in-house developed analysis programs, CAD/CAM, graphics software, and data management software, as well as license managers, compilers and software development utilities. On-site system administration for hardware and software is required to maintain network security and resource availability for NASA personnel, contractors, and grantees, within and outside the Langley network domain.

3. **OBJECTIVE**

The objective of this task assignment is to provide system administration support and software administration/management for the Advanced Engineering Environments Branch. Work done by this organization supports the following work areas: data visualization and analysis, geometry modeling and grid generation, synthetic vision and GIS, scientific data management, and IDC support. In addition, system administration support and software administration/management for the STSB Beowulf cluster is also to be performed as part of this task.

4. **GENERAL IT SUPPORT SERVICES**

Services Specified Through Exhibit A:

Services will include: System Administration, IT Security Administration, Hardware Maintenance, System Software Management, Applications Administration/Management, Customer Support, and IT Consultation.

Refer to Exhibit A, Inventory of Equipment and Software (attached), that has been completed to define the required general IT support services.

The service of IT Security Administration shall be provided for those "general support

systems" (see NPG 2810.1) listed in Exhibit A. The level of security shall be consistent with the information category identified for each such system.

Any system software, application software, or database software that is licensed to run on a particular item of equipment is entered in the respective column for that item. Software that does not require a license is also included if it is relevant to any of the required services.

The services of System Administration (SA), Hardware Maintenance (HM), System Software Maintenance (SSM), and Applications Management (AM) are required for the items of equipment or software that are checked in the respective columns of Exhibit A. Additional requirements for systems designated as critical to AEED are also indicated.

The service of Application Administration provided for the software applications designated in the software inventory listed in Exhibit A shall include:

- " Interacting with software vendors
- " Tracking problems and issues
- " Maintaining the license manager and license files
- " Working directly with the users to ensure that the software is applicable and ready for use
- " Managing the complex dependencies between applications and system software
- " Optimizing the configuration to ensure that the user is achieving the best results
- " Play a key role in IT security planning and execution.

It is critical that the AA fully understand system-level security controls such as Least Privilege and Role Based Access Control in order to implement these within the application framework and maintain proper permissions for all data and files used as input or resulting from the operation of complex software systems used to support the research and work activities within AEED.

In the LaRC environment, it is expected that an Application Administrator have the following skills, knowledge and experience:

- " Familiarity with the mission requirements as related to specific applications.
- " Advanced understanding of the specific software application, tool or package.
- " BrainBench certification or other independent certification process
- " Experience in performing the System Administrator role on the platform systems.
- " Ability to install and debug complex patches from vendors (i.e., administrator rights).
- " Knowledge in the workings of systems software that is required to support the software application, tool or package (e.g., database administration, remote program execution).
- " Thorough understanding of the relationships that exist between the operating system and the application in order to define, configure and sustain these links.
- " In-depth skills in TCP/IP networking in addition to the specific network protocols used by the application.

Customer Support and IT Consultation and Training:

The Contractor shall provide the basic level of Customer Support and IT Consultation and Training given in Sections 4.7 and 4.8 clauses a) and c) of the SOW for all General IT Support Services.

The Contractor shall provide recommendations to the TAM outlining ways in which system administration of AEED IT resources can be streamlined while maintaining or improving the

productivity of the research personnel using the computers in the AEEB.

Exceptions and Additional Requirements:

All work items to be performed under this task assignment shall be logged and tracked by workarea using the CALYPSO software. The work items to be tracked include general SA tasks initiated by the SA staff as well as those requested by users. The technical monitor shall be given access to view all CALYPSO entries related to this task assignment.

For systems that are covered under vendor or third-party hardware or software maintenance contracts, initial diagnosis of problems or failures shall be conducted by the Contractor, and the maintenance contractor shall be contacted by the Contractor for problem resolution. Hardware maintenance shall not include acquisition of replacement parts, but quotes for replacement parts will be obtained from vendor or third-party sources and provided to NASA Technical Monitor for procurement.

The Contractor shall assist the Government in planning IT requirements for the coordination of construction of new computer facilities and relocation of computer equipment. Typical areas include recommendations for power and cooling of computing equipment, space utilization, networking and cabling issues, schedules, etc.

At least one of the contractor personnel assigned to this task assignment shall be dedicated to the AEEB labs to guarantee continuity of services and shall be located on-site in the GEOLAB/DVAL area in Room 1051, Building 1268. Computer systems will be configured to operate 24 hours per day, 7 days per week. Contractor personnel are expected to be available during the prime operating hours of the LaRC (9 am - 5 pm, Monday-Friday) to resolve problems. In general the computer systems will run unattended outside these hours. Administration and maintenance operations shall be planned and scheduled so as to have minimal impact on production use of the systems that may occur at any time of the day. Therefore some SA operations will need to be coordinated with the technical monitor of the work area and performed after prime working hours. Operations shall be monitored outside of normal working hours and problems will be reported to designated persons who will respond and initiate correction of the problem at the beginning of the next work day.

The Contractor shall update the list of the root passwords for the computers listed in Exhibit A in the event any root password is changed. The modified list shall be hand delivered to the TAM within 1 working day of any changes. The list will be stored in the safe located in the TAM's office, Room 1052, Building 1268.

The Contractor shall perform backups of computer file systems for the computers listed in Exhibit A to minimize the risk of corrupted or lost data. The backups of UNIX/LINUX file systems shall be performed in such a manner to fully restore the complete file systems on a given day to their state 24 hours previous. In the data management area, the backups need to be conducted in a manner to allow a 6 month archive of the data stored on these machines as well as being able to restore file systems to their state 24 hours previous to a request for file recovery. The data to be archived will be designated by the AEEB data management team.

The Contractor shall prepare and submit costs incurred per work area monthly on the first day after the CONITS financial reports are posted in TIPS. The report shall include the accumulated cost as well as the number of hours and costs expended in the previous month for the GEOLAB, DVAL, Data Management, Synthetic Vision, and the General AEEB IT work

areas included in this task assignment as defined in Exhibit A for this task. The report shall also summarize the number of active, inactive, and resolved SA tasks for the previous month per work area. At a minimum, this report shall be submitted electronically to the technical monitor of this TA.

The contractor shall monitor costs in each work area as well as the overall cost of this task so as not to exceed the government provided funding estimates at the fiscal year boundary and the contract year boundary. The contractor shall bring to the attention of the technical monitor any task to be performed under this task assignment that will cause cost overruns or a large increase in spending rate in any work area.

General IT Support Services Performance Metrics

Performance Standard: Response to requests for help is given within Four hours. Customer requests are tracked and appropriate expert advice is sought when needed. Appropriate and correct advice is given

Performance Metrics:

Exceeds: "Meets" and customers rate service as very-good to excellent.

Meets: Response to requests for help is given within four hours. Customer requests are tracked and appropriate expert advice is sought when needed. Customers rate service as satisfactory or better.

Fails: Customers rate service as unsatisfactory

Performance Standard: The systems to which these services apply are kept up-to-date with minimum disruption in capability due to upgrades.

Performance Metrics:

Exceeds: All notifications of updates or upgrades are acted upon and all approved upgrades are installed on schedule and without disruption; or "meets" and improvements to systems are recommended and adopted.

Meets: All notifications of updates or upgrades are acted upon. All approved upgrades are installed with minor delays and disruptions.

Fails: Any of the requirements of this subsection (a through e) are not satisfied.

Performance Standard: Archiving schedules are met and systems are ready to restoring databases on short notice.

Performance Metrics:

Exceeds: "Meets" and improvements in recovery procedures are recommended and adopted.

Meets: Archiving schedules are met. Semi-annual disaster recovery tests are held and confirm readiness for disaster recovery.

Fails: Either requirement of this subsection, a, b, is not satisfied.

Performance Standard: The security of systems and data that fall under this TA is ensured

Performance Metrics:

Exceeds: The system meets the baseline IT security requirements for an information category with more stringent requirements than the

information category of the system; there are no unpatched vulnerabilities, unless the vulnerability has been mitigated by other action, accepted by line management and approved by the LaRC IT Security Manager; user accounts are removed by the close of business of the day that the requirement for an account is terminated.

Meets: All baseline IT security requirements for the information category are either met or have a waiver for non-compliance from the LaRC IT Security Manager; the system is up-to-date with security patches or has scheduled the installation of such patches at the completion of a test that precludes immediate installation; user accounts are removed within one week of the termination of the requirement for an account; any IT Security incidents are reported to the LaRC IT Security Manager as soon as possible after they are discovered.

Fails: The system does not comply with the baseline IT security requirements for the information category and does not have a waiver for non-compliance from the LaRC IT Security Manager; the system is not up-to-date with IT security patches; user accounts, for which the requirement was terminated have not been removed after a period of two weeks; the system has an IT security incident that is not reported to the LaRC IT Security Manager.

5. SYSTEM AND APPLICATION DEVELOPMENT SERVICES

None required.

6. WORK-AREA SPECIFIC SERVICES

Work Area Title: Data Storage and Archival

LaRC Manager:

Work Area Description: This task includes archiving data using a data silo and Overland Data Storage systems connected to a SUN server. This work includes installing commercial software, authoring and maintaining scripts.

Work Area Requirements: The contractor shall assist the Government in archiving data to an Overland Data Storage Library connected to a SUN workstation. The contractor shall be responsible for writing and maintaining any scripts necessary to make the archiving process automated for users. The contractor will aid in diagnosing, maintaining and troubleshooting the related hardware and software.

The contractor shall assist the Government in finding hardware and software solutions to data archival computer requirements. The contractor shall investigate alternatives and present the Government with the different options. The contractor shall be responsible for assembling Government specified hardware solutions and installing and maintaining software solutions. The software solutions may be commercial software or scripts written by the contractor.

Work Area Title: Database Administration Support

LaRC Manager:

Work Area Description: Oracle database administration support and services will be provided as requested by the Work Area Manager for the project.

Work Area Requirements: The services provided may include (but are not limited to) the following with concurrence of Work Area Manager.

- a) Establish database on designated server using database schema provided.
- b) Creation of monitoring, backup and recovery routines
- c) Diagnosis and resolution of performance and other database problems.
- d) Maintenance of existing Oracle databases including optimization and periodic testing of backup and recovery procedures.
- e) Oracle patches and upgrades
- f) Restoration and recovery of Oracle databases.

Work Area Title: STSBWulf System Administration

LaRC Manager:

Work Area Description: This task includes the system administration of the STSBWulf computational cluster. This work includes installing commercial software, authoring and maintaining scripts.

Work Area Requirements: The duties to be performed by the contractor will include, but are not limited to, the following tasks:

- 1) identification & recommendation of hardware upgrades
- 2) Operating System maintenance to include security upgrades
- 3) Updating analytical software when provided by software vendors
- 4) Install & maintain queuing system software
- 5) Manage electrical & heat load budgets for the room housing the cluster

7. Exhibit A

[Exhibit A](#)

8. SPECIAL SECURITY REQUIREMENTS

None.

9. SOFTWARE ENGINEERING PROCESS REQUIREMENTS

None.

10. JOINT REVIEW SCHEDULE

There will be a joint review of the work of this task at meetings to be held biweekly on Thursdays at 2 pm. The following persons or their alternates are required to attend: NASA technical monitors and Contractor personnel assigned to task. Task planning/status, technical performance, timeliness, cost, and staffing will be discussed.

11. PERIOD OF PERFORMANCE

This TA is effective from 02/01/01 to 04/27/10

12. TECHNICAL PERFORMANCE RATING

In evaluating Technical Performance, quality and timeliness shall be rated as follows:

Quality: 60% Timeliness: 40%

13. RESPONSE REQUIREMENTS

The Contractor shall prepare a task plan within three weeks of receiving this TA. This Task Plan shall address the contractor's specific work plans, associated estimated labor hours, cost and schedule.

14. FUNDING INFORMATION

Funding last submitted on 07/24/2009.

15. MILESTONES

None required.

16. DELIVERABLES

None required.

17. FILE ATTACHMENTS

[Others1](#)